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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,333	05/04/2006	Wilhelm Rademacher	13779-555	5693
45473	7590	07/28/2010	EXAMINER	
BRINKS, HOFER, GILSON & LIONE			SCHLIENTZ, NATHAN W	
P.O. BOX 1340			ART UNIT	PAPER NUMBER
MORRISVILLE, NC 27560			1616	
			MAIL DATE	DELIVERY MODE
			07/28/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,333	Applicant(s) RADEMACHER ET AL.	
	Examiner Nathan W. Schlientz	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-19 is/are pending in the application.
- 4a) Of the above claim(s) 11-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-10 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the Claims

Claims 8-19 are pending in the present application. Claims 11-18 are withdrawn as being drawn to nonelected subject matter. Thus, claims 8-10 and 19 are examined herein on the merits in so far as they are drawn to the elected species.

It is noted that applicant did not provide the status identifier "Withdrawn" for claims 11-18 in the amendment filed 01 June 2010. However, as noted above and in the Office action mailed 30 December 2009, claims 11-18 have been withdrawn as being directed to a non-elected invention. In the event claims 8-10 and 19 are found allowable, process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined. Currently, claim 18 does not require all the limitations of one of claims 8-10 or 19, and would therefore not be rejoined in the event claims 8-10 and 19 are found allowable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1,148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 8-10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Bartlett et al. (Pest Management Science, 2002), Gullino et al. (Crop Protection, 2000), Müller et al. (WO 97/40688), Rademacher et al. (US 5,869,424), Elad (Netherlands Journal of Plant Pathology, 1993), and Grover et al. (Plant Physiology, 1976).

Determination of the scope and content of the prior art

(MPEP 2141.01)

Bartlett et al. teach pyraclostrobin as one of six commercially available strobilurins for agricultural use, which are one of the most important classes of agricultural fungicides (Abstract). Bartlett et al. further state that the strobilurins, such as pyraclostrobin, have been extremely successful because of the benefits that they bring and are clearly one of the most valuable classes of single-site fungicide ever discovered by the agrochemical industry (pg. 660, Conclusions). Bartlett et al. also teach that there has been consistently greater yield from strobilurin-based cereal fungicide programmes compared with azole-based programmes in situations where both spray-programmes have delivered similar levels of visible disease control or where

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there has been seemingly insufficient difference in visible disease control, termed the strobilurin “greening effect” (pg. 656, left column, 2nd paragraph). One reasoning for the “greening effect” has been that strobilurins are found to affect a variety of physiological processes, such as ACC synthase and thereby ethylene biosynthesis (pg. 656, paragraph bridging the two columns). Bartlett et al. further teach that azoles in combination with kresoxim-methyl, a strobilurin, gave similarly good fungal control but significantly better prevention of leaf necrosis (pg. 656, right column).

Gullino et al. teach that in addition to the strobilurin's direct effect on pathogens, these fungicides induce physiological alterations in many crops, particularly cereals. The resulting longer retention of green leaf tissue and significant yield enhancements are very exciting potential benefits of the strobilurins in agriculture. Such bioregulatory effects, leading to retarded senescence and intensified green leaf pigmentation may be due to several factors, including broad control of pathogens and saprophytes and inhibition of ethylene biosynthesis (pg. 5, left column, 4th paragraph).

Müller et al. teach combinations of pyraclostrobin with kresoxim-methyl or epoxiconazole in the presence of a surfactant (Examples 7 and 25).

Ascertainment of the difference between the prior art and the claims

(MPEP 2141.02)

Bartlett et al. and Gullino et al. do not explicitly disclose combining pyraclostrobin with prohexadione-Ca or Co⁺⁺ ions, as instantly claimed. However, they both teach that the unexpected superior physiological activity is due in part to the inhibition of ethylene biosynthesis. Thus, it would have been *prima facie* obvious to add inhibitors of ethylene

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biosynthesis. Elad teaches that Co^{++} ions are also ethylene biosynthesis inhibitors (Abstract). Grover et al. teach that Co^{2+} is a powerful inhibitor of ethylene biosynthesis (Abstract). Rademacher et al. teach compositions comprising the combination of ethylene biosynthesis inhibitors and plant growth retardants, such as prohexadione-Ca (Abstract).

Finding of *prima facie* obviousness

Rational and Motivation (MPEP 2142-43)

Therefore, it would have been *prima facie* obvious for one of ordinary skill in the art at the time of the invention to combine the strobilurin, pyraclostrobin, as reasonably taught by Bartlett et al., with inhibitors of ethylene biosynthesis, such as Co^{++} ions, in order to retard senescence and intensify green leaf pigmentation, as reasonably taught by Elad and Grover et al., as well as combine prohexadione-Ca and azoles to prevent leaf necrosis.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Response to Arguments

Applicant argues on page 5 that the examiner did not provide any motivation to combine pyraclostrobin, which is taught to be an ethylene biosynthesis inhibitor, with another ethylene biosynthesis inhibitor. Applicant further argues that the examiner did

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provide a reason why pyraclostrobin should be combined with prohexadione-Ca in the claimed ratio.

However, the examiner respectfully argues that Müller et al. teach combining two ethylene biosynthesis inhibitors, pyraclostrobin with kresoxim-methyl. Therefore, it would have been *prima facie* obvious to combine pyraclostrobin with another known ethylene biosynthesis inhibitor. Also, such would have been obvious in the absence of evidence to the contrary because it is generally *prima facie* obvious to use in combination two or more ingredients that have previously been used separately for the same purpose to form a third composition useful for that same purpose. The idea of combining them flows logically from their having been taught individually in the prior art. *In re Kerkhoven* 626 F.2d 646, 850, 205 USPQ 1069, 1072 (CCPA 1980). With regard to the ratio of pyraclostrobin to prohexadione-Ca, one of ordinary skill in the art through routine experimentation would readily be able to determine the necessary amounts of each component to be effective.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Schlientz whose telephone number is (571)272-9924. The examiner can normally be reached on 9:00 AM to 5:30 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NWS

/John Pak/

Primary Examiner, Art Unit 1616